

CLAIMS

1. ~~What I claim as my invention is the process by which the volume within an air tight space, void, container, tank or pipe can be determined using electronic gas mass flow technology.~~
2. ~~The process can use regulated pressurized air.~~
3. ~~The process can use regulated pressurized gas for specialty requirements such as fuel tanks, chemical containers.~~
4. ~~The process can use atmospheric air entering into an evacuated void, space, container, tank or pipe~~
5. ~~The process can use air being drawn through the sensor with vacuum to determine volume.~~
6. ~~By changing sensor size, voids or containers of varying size can be measured.~~
7. ~~The process can be modified such that partial pressure can be used.~~
8. ~~As an example, if a pressure of 7.35 psi is used, the volume recorded would be doubled as we have only pressurized with half the volume (of air or gas).~~
9. ~~The process can be modified such that partial vacuum can be used.~~
10. ~~As an example, if we use a vacuum of 14.96 inches of Mercury, the volume recorded would be doubled as only half the air has been removed.~~
11. ~~The process can be enhanced by using unregulated or regulated pressure to identify leakage in a void or container and then locate such leakage with such simple means as 50% water/ 50% liquid household soap solution applied manually or through spray apparatus.~~
12. *What is claimed is:*
13. *10. A device for measuring the unknown empty internal volume of a closed container, void or any other air tight vessel, piping system, or tank comprising:*
14. *a remotely located regulated pressure of control gas in order to provide volumetric measurement according to Boyle's Law;*

11. wherein said gas, in accordance to Claim 10, may be air, elemental or molecular gas or combination of elemental or molecular gases;
12. wherein the regulated pressure of said gas may be varied to adjust for varying environmental and physical conditions;
- 5 a remotely located regulated flow controlling device to maintain accuracy of said gas through the gas mass flow sensor;
13. wherein said device may be fixed or variable;
- a remotely located electronic gas mass flow sensor for providing gas volume measurement into the said void;
- 10 a remotely located digital read-out meter capable of interpreting the raw signal provided by the gas mass flow meter providing direct volume measurement of the said void, closed container or other airtight vessel ;
- whereas the combination of remotely located internal components measures the volume of said closed container, void or any other air tight vessel, piping system, or
- 15 tank.
14. A device for measuring the unknown empty internal volume of a closed container, void or any other air tight vessel, piping system, or tank comprising:
- a vacuum pump to remove (evacuate) the air from the void, container, piping system
- 20 or other airtight container;
15. wherein evacuation may be complete (29.92 in HG) or may be partial vacuum
- a regulated flow controlling device to maintain accuracy of said gas mass flow sensor;
- 25 16. wherein said device may be fixed or variable;
- a remotely located electronic gas mass flow sensor for providing gas volume measurement from said void;
- a digital read-out meter capable of interpreting the raw signal provided by the gas mass flow meter providing direct volume measurement of the said void;
- 30 whereas the combination of remotely located internal components measures the volume of said closed container, void or any other air tight vessel, piping system, or tank

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